Using IN-SPIRE™ to Analyze NIH-supported Sickle Cell Disease Portfolio

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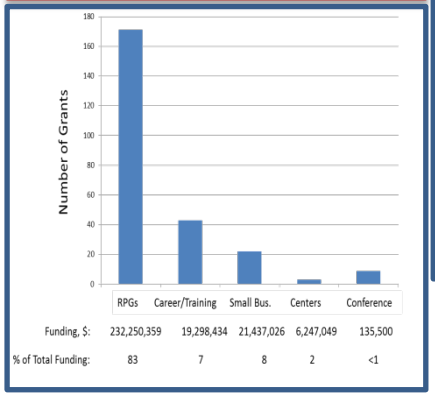
Background

Sickle Cell Disease (SCD), an inherited blood disorder is due to a single amino acid substitution on the beta chain of hemoglobin, and is characterized by anemia, severe infections, acute and chronic pain, and multi-organ damage. The NIH is dedicated to support research across the basic science, translational and clinical spectrum to enhance care and ultimately, to effect cure of SCD that causes such suffering.

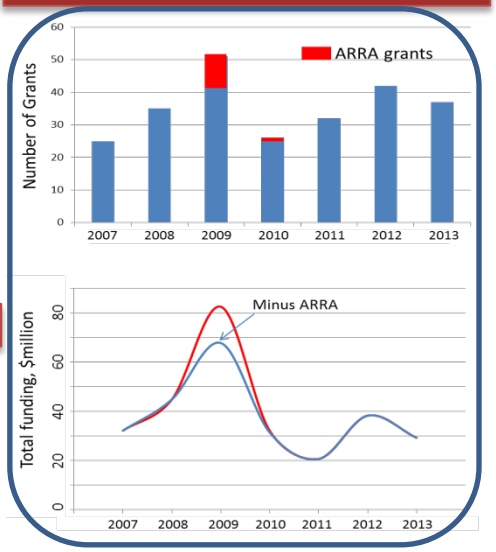
Data Collection and Analysis Methods

We obtained grant-specific award and funding data from the NIH Query View Report (QVR) and the RePORTER website. We searched the QVR database using the following search criteria: (1) all Research Condition and Disease Categorization (RCDC) terms for Sickle Cell Disease; (2) competing projects; (3) awarded by all ICs, and (4) awarded from FY 2007 to 2013. IN-SPIRE™, version 5 software was used to visualize and analyze the QVR-generated data. Grants from each machine-generated cluster were analyzed manually to confirm thematic commonality.

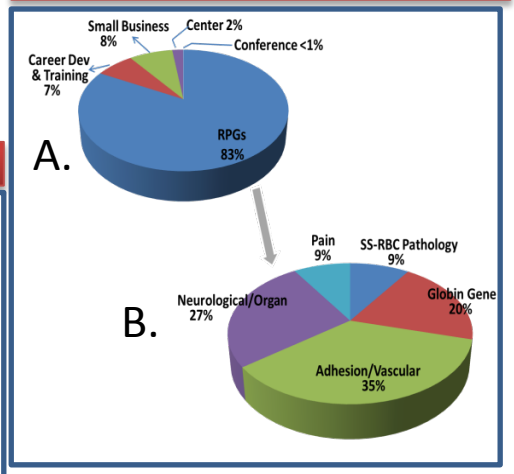
Clusters of 5 groups and Level of Funding



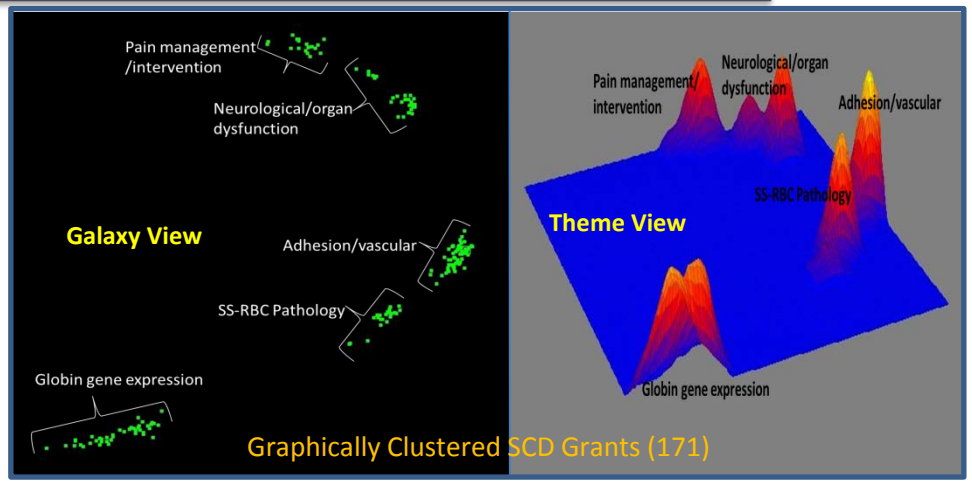
Timeline and Funding for SCD Research

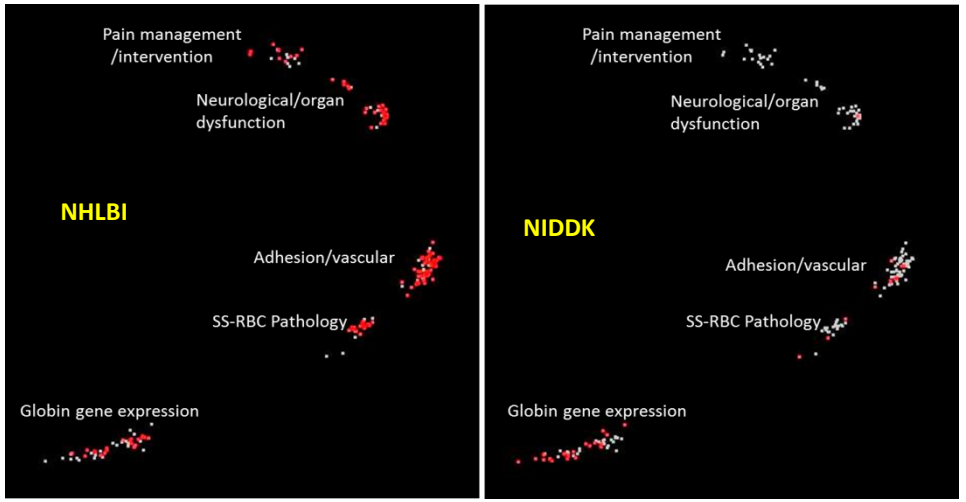


Funded Mechanisms and RPG Sub-clusters



Distribution of total SCD research funds among the various grant mechanisms (A). Research Project Grants (RPGs) received 83% of total funds. (B) Funding distribution of RPG dollars among the 5 RPG clusters.





Galaxy View of the 171 RPGs. Grants funded by NHLBI (left panel) and by NIDDK (right panel) are indicated by red dots. NHLBI is funding all aspects of the SCD research, while NIDDK funding is focused largely on the basic biology of SCD.

Summary

Our analysis has shown that NHLBI is the largest funder of SCD research with 67% of total grants, spending 77% of total funds; followed by NIDDK that is funding 19% of grants, spending 13% of total funds. The remaining 14% of grants totaling 10% of the funds are from all other ICs combined.